UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,410	03/22/2004	Akihito Okura	250743US90	9849

22850   7590   12/10/2009
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER
PHUNG, LUAT

ART UNIT	PAPER NUMBER
2464	

NOTIFICATION DATE	DELIVERY MODE
12/10/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

	Application No.	Applicant(s)
Office Action Summary	10/805,410	OKURA ET AL.
	Examiner	Art Unit	
	LUAT PHUNG	2464	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 August 2009</u>.
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-11* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-3,5-8 and 11* is/are rejected.
7)☒ Claim(s) *4,9 and 10* is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   Claims 1 and 4-6 are amended. Claims 9-11 are added. Claims 1-11 are

pending. Claims 4, 9 and 10 are objected to. Claims 1-3, 5-8 and 11 are rejected.

2.   Applicant's arguments with respect to claims 1-11 have been considered but are

moot in view of the new ground(s) of rejection.

Response to Arguments

3.   On page 8, Applicant argues that the combination of Winther and Benayoun fails

to establish *prima facie* case of obviousness. The TOS value set by the ingress node of

16 of Benayoun does not indicate any information regarding tradeoffs [of Winther] but,

instead, enables selection of a routing table. Modifying the TOS field 140 of Winther

with the TOS value set by the ingress node of Benayoun violates MPEP 2143.01.

Examiner's response:

As a recap of the rejection of claim 6, Benayoun from the same or similar fields of endeavor discloses a service type field 28 in the IP header **(Fig. 3)**, the field including precedence bits and TOS bits **(col. 3, lines 35+)**, the TOS value being used to select an appropriate routing table identifying the route to be used, specifically selecting an output queue for transmitting the frame over the network, e.g., voice frame to the first intermediate node and data frame to the second intermediate node **(col. 4, lines 24+)**; i.e., TOS value being used to select a path for routing. In Benayoun, the "all zeros" TOS defines the default route. **(col. 4, lines 14+)** Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement TOS value to select a route as suggested by Benayoun in the network using precedence bits and TOS bits of Winther. The motivation for doing so would have been to determine an optimal route for IP packet transmission.

It is noted that the TOS field, as well known in the art according to the standard specification and as disclosed by both Winther and Benayoun, is indeed used for data routing as claimed and as recited in rejection.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

6.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

     1.   Determining the scope and contents of the prior art.
     2.   Ascertaining the differences between the prior art and the claims at issue.
     3.   Resolving the level of ordinary skill in the pertinent art.
     4.   Considering objective evidence present in the application indicating
        obviousness or nonobviousness.

7.   Claims 6 and 11 are rejected under U.S.C. 103(a) as being unpatentable over

Winther et al (US Pub. 2002/0141382) in view of Benayoun et al (US 6,950,429), and

further in view of Walters et al (US Pub. 2002/0176131).

    Regarding claim 6, Winther discloses a router in an IP network (para. 58),

comprising:

a control and relay unit configured to control and route at said router in
accordance with first bits for implementing bandwidth control at said router stored in a
first area assigned within an IP-header field of an IP packet **(para. 58-62; router**
manages bandwidth allocation for the transmission of IP data packet by setting
type of service (TOS) octet of IP header, including precedence field defining three
priority levels for businesses with significant data requirements (e.g., T3 or
44Mbps), medium- and small-sized businesses (e.g., 1Mbps) and home-based
customers (lowest transmission requirement), i.e., precedence being used for
bandwidth control), and second bits stored in a second area also assigned within said
IP-header field of the IP packet **(para. 58, 59; TOS field in TOS octet of IP header)**,
wherein said first bits and said second bits do not interfere with each other within said
IP-header field of the IP packet **(Fig. 6, elements PRECEDENCE 138 and TOS 140 in**
TOS octet 134 of IP header 154; para. 57).

Winther expressly discloses second bits as recited above, and a router accepting

data packets and routing them to a LAN or control node **(para. 47)** but not *second bits*

that indicate a path for routing the IP packet to a destination router at said router.

However, it is well known to one of ordinary skill in the art at the time of the invention

that TOS field is used for routing packets in an IP network. For example, RFC 1349

(Type of Service in the Internet Protocol Suite), sec. 7 (Use of the TOS Field in

Routing), specifically sec. 7.2 recites "A router in the Internet should be able to consider

the value of the TOS field when choosing an appropriate path over which to forward an

IP packet." Furthermore Benayoun from the same or similar fields of endeavor

discloses a service type field 28 in the IP header **(Fig. 3)**, the field including precedence

bits and TOS bits **(col. 3, lines 35+),** the TOS value being used to select an appropriate

routing table identifying the route to be used, specifically selecting an output queue for

transmitting the frame over the network, e.g., voice frame to the first intermediate node

and data frame to the second intermediate node **(col. 4, lines 24+)**; i.e., TOS value

being used to select a path for routing. In Benayoun, the "all zeros" TOS defines the

default route. **(col. 4, lines 14+)** Thus it would have been obvious to the person of

ordinary skill in the art at the time of the invention to implement TOS value to select a

route as suggested by Benayoun in the network using precedence bits and TOS bits of

Winther. The motivation for doing so would have been to determine an optimal route for

IP packet transmission.

The combination of Winther and Benayoun discloses all of the subject matter

except *a bit-setting information-obtaining unit configured to obtain first bits and second*

bits from a QoS controller. However Benayoun discloses the ingress node, i.e., QoS

controller, maintaining a configuration table to determine and change the value of the

TOS field, and the first and second intermediate nodes using the TOS value to select

routing table to transmit the frame **(Fig. 1, ingress node 16; col. 4, lines 50+)**.

Furthermore Walters et al from an analogous art discloses a network management

system (NMS) performing configuration while the node manager performing routing

functions **(Fig. 31; Para. 271)**. Thus it would have been obvious to one of ordinary skill

in the art to implement setting the first bits and second bits as suggested by Winther

and Benayoun using the NMS of Walters, as it is well known in the art to use centralize

network configuration at a management or controlling node such as an NMS in order to

focus real-time functionalities at the routing nodes in the network.

Regarding claim 11, Winther in view of Walters further discloses wherein

second bits corresponding to the first bits received by the bit-setting information-

obtaining unit are changed, by the QoS controller, in accordance with traffic conditions

at the router. **(para. 65)**

8.   Claims 1, 3, 5, 7 and 8 are rejected under U.S.C. 103(a) as being unpatentable

over Winther et al in view of Benayoun et al and Walters et al, and further in view of

Beshai et al (US Pub. 2002/0131363).

Regarding claims 1 and 5, Winther discloses all of the subject matter as previously recited in the rejection of claim 6 except a reporting unit configured to report to the routers the first bits and the second bits stored by the storing unit. Beshai from the same or similar fields of endeavor discloses a QoS controller comprising a reporting unit **(Fig. 1, element 26)** configured to report to the routers **(Fig. 1; elements 22)** traffic data and state information **(Fig. 1, lines from elements 22 to 26; para. 13, 15)**. Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to combine the system being able to store router-control and routing bits of Winther and Benayoun with the reporting capability of Beshai by having the system reporting these types of bits to the routers in the network. The motivation for such a combination would have been to refine the routing features across the network.

Regarding claim 3, the combination of Winther, Benayoun and Beshai discloses substantially all of the subject matter as previously recited in this office action. Winther in view of Benayoun further discloses further comprising a database unit **(Fig. 5, element 114)**, wherein the database unit represents a first bit sequence as a router-control class for controlling the routers **(para. 59-62; precedence field being used for bandwidth allocation of the router)**, and a second bit sequence as a routing class for routing at the routers **(para. 64; TOS field being used for routing)**, and stores, in accordance with a type of the IP packet, a relationship between the router-control class and the routing class. **(para. 58-59, 65; router managing bandwidth allocation and transmission prioritization by setting or altering the type of service octet which includes the precedence and TOS fields; varying levels of service, e.g., high priority, high speed, low priority, and low speed, can be set through setting of precedence field and TOS field; i.e., there exists a relationship between the first bits and the second bits to accommodate the different levels of service).**

Winther in view of Benayoun discloses the relationship between the router-control class and the routing class as recited above, and the relationship stored at the database unit **(Fig. 5, single board computer 114 containing ROM and RAM as per para. 53),** but Winther does not explicitly disclose the reporting unit reports to the routers the relationship. Beshai from the same or similar fields of endeavor discloses the reporting unit reports to the routers the traffic intensity and network state information to compute network routing sets and maintain network topology **(para. 16-19; para. 26, lines 1-5).** Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to combine the system being able to manage router-control and routing bits of Winther and Benayoun with the reporting capability of Beshai by having the system reporting updates related to these types of bits to the routers in the network. The motivation for such a combination would have been to refine the routing features across the network.

Regarding claim 7, the combination of Winther, Benayoun and Beshai discloses substantially all of the subject matter as previously recited in this office action. Winther in view of Benayoun and Beshai further discloses a router comprising a setting unit **(Fig. 5, element 114)** configured to set, based on a type of the IP packet, a router-control class to the first bits and a routing class to the second bits. **(para. 59-65)**

The combination of Winther and Benayoun does not explicitly disclose the router is arranged at a boundary of the IP network. Beshai from the same or similar fields of endeavor discloses a router arranged at a boundary of an IP network **(node in Fig. l, element 22; para. 28, line 1)**. Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to combine the router of Winther and Benayoun with the network of Beshai by placing the router at the edge of the network. The motivation for such a combination would have been to refine the routing features across the network.

Regarding claim 8, the combination of Winther, Benayoun and Beshai discloses substantially all of the subject matter as previously recited in this office action. The combination of Winther and Benayoun does not explicitly disclose further comprising:

a traffic-measuring unit configured to measure volume of traffic flowing into the router; and

a traffic-condition reporting unit, configured to report the measured volume as a traffic report to a QoS controller connected to the IP network, as recited in claim 8.

Beshai from the same or similar fields of endeavor discloses a router comprising:

a traffic-measuring unit **(Fig. 1, element 28)** configured to measure volume of traffic

flowing into the router; **(para. 51, lines 23-24; para. 87, lines 5-7)** and a traffic-

condition reporting unit **(Fig. 1, element 28)**, configured to report the measured volume

as a traffic report to a QoS controller connected to the IP network. **(para. 51, lines 26-**

30). Thus it would have been obvious to the person of ordinary skill in the art at the time

of the invention to combine the router using, router-control and routing bits of Winther

and Benayoun with the router with traffic measuring and reporting of Beshai by adding

the measurements capability on the router. The motivation for such a combination

would have been to refine the routing features across the network.

9.   Claim 3 is alternately rejected under U.S.C. 103(a) as being unpatentable over

Winther et al in view of Benayoun et al, Walters et al and Beshai et al, and further in

view of Koyanagi et al (US Pub. 2001/0013067).

Regarding claim 3, the combination of Winther, Benayoun, Walters and Beshai

discloses all of the subject matter as previously recited in this office action, including a

first bit sequence as a router-control class and a second bit sequence as a routing

class, as recited in claim 3, the first bits for implementing bandwidth control and second

bits indicating a path for routing, as recited in claim 1 on which claim 3 depends.

However assuming *arguendo* that the combination does not disclose a relationship

between the router-control class and the routing class. It is noted that the relationship

between bandwidth and route selection for data transmission is well known in the art.

For example, Koyanagi from the same or similar fields of endeavor discloses a

path/class selection unit referring to the routing table to select the most appropriate path

and service class to route IP packets, the service class being set based on transmission

speed, i.e., bandwidth. **(Fig. 12B; para. 65)** That is, the routing table maintains a

relationship between bandwidth and the route from which data is transmitted. Thus it

would have been obvious to the person of ordinary skill in the art at the time of the

invention to implement the routing table indicating relationship between bandwidth and

route selection, corresponding to router-control class for bandwidth control and routing

class for indicating a path for routing as claimed, of Koyanagi in the system of Winther,

Benayoun, Walters and Beshai. The motivation for such a combination would have

been to provide optimal routing for the requested service.

10.   Claim 2 is rejected under U.S.C. 103(a) as being unpatentable over Winther et al

in view of Benayoun et al, Walters et al and Beshai et al, and further in view of Colley et

al (US 6,650,644).

Regarding claim 2, the combination of Winther, Benayoun and Beshai discloses

all of the subject matter except wherein the storing unit further comprises a storing-

control unit configured to change a ratio of the first bit area to the second bit area so as

to store the first bits into the first bit area and the second bits into the second bit area.

Colley from the same or similar fields of endeavor discloses a storing-control unit **(Fig.**

1, element 26) configured to change the size of the fields in the TOS octet of the IP

header **(col. 5, line 57 to col. 6, line 12).** Thus it would have been obvious to the

person of ordinary skill in the art at the time of the invention to change the ratio of the

first bit area and the second bit area by adjusting the fields in the TOS octet, as

suggested by Colley, in particular, the precedence and TOS fields in the system of

Winther, Benayoun and Beshai, in order to further refine QoS management control.

Allowable Subject Matter

11.   Claims 4, 9 and 10 are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Conclusion

12.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure (see form 892).

13.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to LUAT PHUNG whose telephone number is (571) 270-

3126. The examiner can normally be reached on M-Th 7:30 AM - 5:00 PM, F 7:30 AM -

4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ricky Q. Ngo can be reached on 571-272-3139. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. P./

Examiner, Art Unit 2464

/Ricky Ngo/

Supervisory Patent Examiner, Art Unit 2464